United States Patent [19]

Kono et al.

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[54] **HANDWRITTEN CHARACTER INPUT DEVICE**

[75] Inventors: **Yoshio Kono**, Nara; **Yukihiro Inoue**, Kashihara, both of Japan

[73] Assignee: **Sharp Kabushiki Kaisha**, Osaka, Japan

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[58] **Field of Search** ..... 340/707, 708, 784; 350/331 R, 338, 332-334

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,846,580	11/1974	Brenner	178/19
4,061,418	12/1977	Poensgen	350/337
4,126,383	11/1978	Doriguzzi et al.	350/338
4,451,698	3/1984	Whetstone	178/19
4,497,977	2/1985	Saito	178/19

FOREIGN PATENT DOCUMENTS

0049676 3/1984 Japan 340/707

OTHER PUBLICATIONS

U.S. Journal: IBM Technical Disclosure Bulletin, vol. 14, No. 7, Dec. 1971, pp. 1963-1965.

Primary Examiner—Stanley D. Miller
Assistant Examiner—David Lewis
Attorney, Agent, or Firm—Birch, Stewart, Kolasch & Birch

[57] **ABSTRACT**

A handwritten character input device includes an opaque tablet or digitizer for inputting a handwritten character or figure into an apparatus. The tablet is of an electromagnetic induction type. The tablet is positioned under a liquid crystal display panel and an aluminum-evaporated film reflector is provided for the liquid crystal display. Preferably, the aluminum-evaporated film reflector is as thick as 1.0 micron or less. A conductive shield plate may be further provided between the tablet and a driving circuit substrate for the liquid crystal display panel. This shield plate serves to magnetically isolate the tablet from the driving substrate.

5 Claims, 5 Drawing Figures